

REGIONAL REVIEW

Volume 9, Issue 2

**Brooke-Hancock-Jefferson
Metropolitan Planning Commission**

Spring 2008

A tale of three bridges—plus one: the fort steuben, the market street, the veterans memorial and a new ohio river bridge crossing

The bridge issues facing the tri-county region are many. The Fort Steuben bridge is slated for demolition in 2009; the Market Street bridge is on borrowed time; the Veterans Memorial bridge is not capable of handling all the traffic if the other two bridges close and a new bridge crossing south of Wellsburg is still in the planning stages.

For those of us who live in the area and depend on crossing the river to work, shop or seek medical attention, the repercussions of any one of the three bridges closing—whether permanently or temporarily—is of major concern. We've never had to worry about the possibility of not being able to cross the river. What we have seen is that a temporary closure due to maintenance/repair or accidents results in congested traffic, rerouting and/or increased travel time.



We have enjoyed the convenience of having our choice of three bridges to cross over the Ohio River since 1990 when the **Veterans Memorial Bridge** opened to traffic on May 4—more than three decades after planning first began. Development was delayed time and time again due to changes in environmental policies and design and the search for funding. Eventually, the \$70 million cost was covered through federal aid from primary, regular and discretionary bridge funds and by both Ohio and West Virginia combing their resources.

The project for the cable-stayed bridge did not receive Federal Highway Administration location and design approval until 1978. Prior to that time, a preliminary engineering report was done for Ohio in 1961 with a route location study not being completed until 1964 for West Virginia. A 1972 environmental impact statement revealed the historic Federal Land Office on the Ohio side needed to be moved, and that wasn't accomplished until 1982. A change from toll to public financing necessitated the need for further public meetings and hearings in 1976—1977 which resulted in more delays. In mid 1979, construction began with the building of the Ohio River piers.

The Veterans Memorial bridge is magnificent to see. A single 360-foot long inverted Y-shaped concrete tower rises above six 12-foot lanes. From that tower, 26 paired cables reach across the 690 foot West Virginia back span and the 820-foot main river span to two Ohio approach spans. The bridge was constructed from 9 million pounds of structural steel, 3.4 million pounds of reinforcing steel and 15,000 cubic yards of concrete. Impressive!

.....continued on Page 3

BHJ METROPOLITAN PLANNING COMMISSION OFFICERS—2008

Gary Folden, Chairman
Chuck Svokas, Vice Chairman
Art Miser, Secretary
Bernie Kazienko, Treasurer

Staff

John C. Brown, PhD., AICP
Executive Director

Email: jbrown@bhjmpc.org

Joan E. Cresap, Finance Manager
Email: jcresap@bhjmpc.org

Mary Moore, Receptionist
Email: mmoore@bhjmpc.org

Michael J. Paprocki
Transportation Study Director
Email: mikepap@bhjmpc.org

Shawn Price
Senior Engineering Technician
Email: sprice@bhjmpc.org

David T. Snelting
Transportation Engineer
Email: dsnelting@bhjmpc.org

Linda Taylor
Office Manager/Rideshare
Email: ltaylor@bhjmpc.org

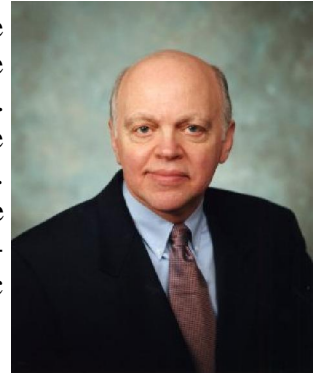
Barb Zimnox
Community Development Specialist
Email: bzimnox@bhjmpc.org

Publication of this newsletter is made possible with assistance from the Federal Highway Administration, the Ohio and West Virginia Departments of Transportation, the West Virginia Development Office, the Appalachian Regional Commission, the U.S. Economic Development Administration and BHJ member governments.

BHJ Regional Review
124 North 4th Street Second Floor
Steubenville OH 43952-2796
Ohio: (740) 282-3685
WV: (304) 797-9666
Fax: (740) 282-1821
Email: bhjmpc@bhjmpc.org
Website: www.bhjmpc.org

From the Executive Director

All partners in the pursuit of a new Ohio River bridge crossing concur there is a need for a crossing in the BHJ region. Nearing their expected life cycles, the Ft. Steuben Bridge at 80 years and the Market Street Bridge at 103 years suggests the construction of a new crossing. The impact of a bridge closure without an adequate bridge substitute is increased congestion, longer emergency response time and the reduction of an economic lifeline for jobs and opportunity.



Unfortunately, the cost of a new bridge crossing, estimated at \$100 million, is high. With this price tag, federal and state dollars must carry the yeoman share of project costs. These resources are limited and competitive. For example, paving alone for projects such as West Virginia's Corridor H can cost up to \$15 million per mile according to the West Virginia Division of Highways.

In addition, to assure their investment, federal and state officials need a regional project consensus. On May 21, 2003, this consensus was publicly validated when the Brooke-Hancock-Jefferson Metropolitan Planning Commission by a 14 yes to 1 no vote concurred with a bridge crossing south of Wellsburg, West Virginia. This vote was adopted upon the recommendation of a 38 member advisory committee and a professional transportation consultant. The advisory committee, throughout 2002, met eight times to review consultant work. Ten sites and a no-build option were compared to 19 measures for vehicular mobility, environmental impact, safety, cost effectiveness and regional growth.

The clear and real fact is that time is ticking. The use of our existing bridge infrastructure is not endless. BHJ has recognized this fact and made the construction of a New Ohio River Bridge crossing their #1 regional transportation priority. To best understand our effort to achieve this priority, we ask you refer to our web site <http://www.bhjmpc.org/> and draw down our "Bridge Study" menu. Available information items include the following topics:

- Bridge History. 1993-2008.
- Key Questions and Answers.
- Phase I. Final Report. 2000. Statement of Need.
- Phase II. Final Report. 2003. Preferred site recommendation, public involvement and final recommendations.
- Phase II. Final Report. Technical Report. 2003. Recommendations for related improvements at Washington Street, University Boulevard and Freedom Way.
- Video. A 15 minute video, completed by West Liberty State to illustrate the need for a new Ohio River Bridge crossing.

John C. Brown, AICP
Executive Director

THE BRIDGES

.....continued from page 1

The **Fort Steuben Bridge** has linked the Steubenville-Weirton metropolitan area since it opened to traffic on August 17, 1928.



This 1920-style wire-cable suspension bridge was the first Ohio River suspension bridge with a concrete floor. With its lattice design for the tower structure, it is considered an engineering wonder. The narrow width of the roadway gives an illusion of the towers being taller than they actually are—but it is an impressive sight.

The Fort Steuben was closed for approximately one month in 1967 when officials found a hole in the bridge floor. All traffic was rerouted to the Market Street Bridge resulting in major traffic jams. At this point, highway officials decided construction plans for the new bridge planned in 1961 should move forward rapidly. The Veterans' Memorial Bridge did not happen for another 23 years.

The **Market Street Bridge**, the oldest of the three, opened on July 2, 1905. It was built by the Ohio Steel



Erection Company with Bethlehem Steel providing most or all of the steel.

Its original purpose was to carry light rail traffic. In 1922, the top chord broke in two places under the weight of the streetcars. David Steinman (later the engineer for the Mackinac Bridge) re-designed the suspension span to accommodate heavier loads.

The bridge was originally privately owned by the Steubenville Bridge Company. In 1941, the State of West Virginia purchased it and rehabilitated the towers and deck flooring. By 1953, all tolls were removed.

The Fort Steuben and Market Street bridges have a historic value for the region. What will it be like if they no longer span the distance between Ohio and West Virginia? Time will tell.



Elected officials speak

By Domenick Mucci, Mayor
City of Steubenville, OH



This article was submitted by Mayor Domenick Mucci, City of Steubenville on behalf of a coalition of mayors dedicated to preserving the bridges in the tri-county, BHJ region.

Remember the buzz word a couple of years ago:
Location. Location. Location.

Today, here in the BHJ region it should be:

Bridges. Bridges. Bridges.

The Ohio Department of Transportation (ODOT) has determined that they will proceed with the removal of the Fort Steuben Bridge regardless of local concerns we have.

The West Virginia Department of Highways (WVDOT) has followed with the announcement that in four years or less the Market Street Bridge may be closed as well. Recent news reports indicate the Market Street Bridge maybe spared demolition until a new bridge spanning the Ohio River is built in the future.

Whatever the case may be, we in the Brooke-Hancock-Jefferson Metropolitan Planning Commission region may very well be left with the Veterans Memorial Bridge connecting Ohio and West Virginia.

That precarious scenario leaves us very little comfort. And knowing that both states understand our desire to promote the area for interstate commerce, housing, commercial and providing our citizens with economic opportunity frustrates us with our plans for the future.

Although ODOT has conducted a time study for traffic to get from the Ft. Steuben Bridge to the Veteran's Bridge they have not done a study on the economic impact the closing would have.

No one has answered the question of "What would happen if we were left with only the Veteran's Bridge if a barge would hit the pier or if the bridge is closed for maintenance work?"

There is also the issue of the intersection of University Boulevard and State Route 7.

There have been repeated requests for the state of Ohio to hire a consultant or incorporate this issue in the scope of work with the removal of the bridge.

ODOT continues to look at the intersection project and the bridge removal as two separate projects. I look at it as one affected area.

Did you know that we have submitted several design plans that were not acceptable to the central office in Columbus? I think the improvement plan and funding should be in place or completed before any work start on the removal process. ODOT did make a commitment, although unknown on what and how much, that they said will improve the affected area as they have in other removals.

ODOT recently made a commitment to the Columbus Pittsburgh Corridor, another reason we should better understand what impact the closing or removal of any bridge closing or removal.

A comprehensive plan that includes the economic impact, road network improvements and funding sources is needed. We continue to see faith and confidence restored in our area and we continue to market our area. But unfortunately, once again our two states don't have the same confidence in us.

I call upon Governor Ted Strickland and Governor Joe Manchin to meet with us on this important subject and assist us in moving forward with a proper resolution and constructive plan for the future of Ohio and West Virginia residents of our area.

Governors join us in investing in the Ohio Valley!!!

ODOT SPEAKS—THE FORT STEUBEN BRIDGE

Information was provided by Becky McCarty, public information officer for ODOT-District 11. The first portion is an official ODOT statement followed by questions from BHJ staff.

The Ohio Department of Transportation (ODOT) has begun the Project Development Process for the removal of the Fort Steuben Bridge.

The Fort Steuben Bridge, pictured below, was built in 1928. The Veterans Memorial Bridge, seen in the background, was constructed in 1990 to replace the Fort Steuben Bridge.

ODOT proposed the Fort Steuben Bridge Removal Project to safely remove the bridge and improve signage and access for re-routing traffic to the US 22 Veterans Memorial Bridge that is within ½ mile of the Fort Steuben Bridge.

The 80 year old structure is at the end of its useful life and is functionally obsolete. Its lanes are narrow and cannot be redesigned to provide additional width. There is a continuing concern over the integrity of the structure.

The travel demand for and use of the Fort Steuben Bridge has decreased due to the weight restrictions on it. The newer US 22 Bridge is structurally adequate and provides a sufficient Level of Service and roadway capacity for the region now and into the future.

How did ODOT arrive at their conclusions?

Subsequent to the opening of the Veterans Memorial Bridge, it was decided that instead of removing the Fort Steuben Bridge immediately that it would be kept open as long as it was safe and financially viable. In 1996, the yearly inspections performed on the bridge indicated the need for a major rehabilitation of the structure. Cost-benefit analysis performed at the time indicated that it was not a financially feasible option to rehabilitate the bridge. Consequently, ODOT initiated the process for

closure and removal of the bridge but agreed to continue to inspect and maintain it at a limited level of expenditures (no more than \$200,000 on average per year) or until an inspection revealed an unsafe condition.

The bridge is currently structurally deficient and has been for a number of years. Based upon its current condition, it has been load posted to effectively keep all truck traffic off it. The structure requires major rehabilitation to keep it safe and open for any length of time. Conservative estimates now show the need for more than \$10 to \$15 million in repairs over the next two to three years. Despite investing those funds, the structure would still be functionally obsolete, with two extremely narrow lanes, and would not meet current design standards.



What does ODOT believe the future will hold when the Fort Steuben closes?

Traffic models developed by ODOT's consultant, hired to develop the demolition plans for the project, have indicated that the removal of the Fort Steuben Bridge will add a maximum of three and a half minutes for some of the users currently using the bridge. For most users, however, this delay will be less than two minutes. Additionally, ODOT is continuing to work closely with BHJ and the city of Steubenville to mitigate and minimize other impacts of the demolition project, including improvements to the city's marina.

Is there any hope that the bridge will remain open for any purpose at all - including, as some have proposed, a trail connection?

No. The bridge does not currently carry a designated bicycle/pedestrian trail, and there is not an existing trail system in Jefferson County, Steubenville or Weirton, West Virginia. Furthermore, there is not a planned trail system of which this bridge is a vital link. Finally, it would be very difficult to provide bicycle/pedestrian access to the Fort Steuben Bridge from Ohio. The current vehicular access to the bridge is from State Route 7, which is a limited access freeway, meaning bicycles and pedestrians are prohibited.

WVDOT SPEAKS—MARKET STREET BRIDGE and a new bridge crossing

Information provided by Richard Warner, PE, assistant director for WVDOT, Planning Services Division.

The West Virginia Department of Transportation owns and is responsible for the maintenance/repairs of both the Market Street bridge and the Veterans Memorial bridge.

Of major concern to the tri-county region is the possible closure of the Market Street bridge. Mayor Domenick Mucci, City of Steubenville, and Mayor Tony Paesano, City of Follansbee, are especially concerned. The bridge is a lifeline for the two cities and would cause major upheaval should the bridge be shut down. Conflicting reports regarding the closure have been circulating for quite some time.

Recently, a WVDOT representative unofficially stated the bridge **could** close in 2-3 years. Later, a statement was released through the media stating there are no immediate plans to work within that time frame. BHJ staff asked for clarification on the fate of the bridge.

*A few years ago, WVDOT issued a statement that if the **Market Street Bridge** were hit by a barge again, it would have to be closed. Is that still considered a true assessment? If so, how does that support the recent statement that the bridge will, in fact, remain open until a new bridge is built?*

More than four years after that unofficial statement was made, it's possible, although highly unlikely, that a loose barge could damage the Market Street Bridge enough that it would not be practical to repair it. The WVDOH has no plans in place to trigger an automatic closure of the bridge following such an occurrence. We would not consider closing the bridge without the benefit of inspection results that advise closure as the only prudent option to ensure the public's continued safety.

Unexpected events could affect the service life of any structure, new or old, but our intention is simply to keep the Market Street Bridge open to traffic for as long as it is safe and practical to do so. If it is reasonable to keep it in operation until a new Ohio River bridge is built, that is what we will do. Although closure is the last-resort option, the opening date for a new bridge may well be a

good 'working' target date for closure of the Market Street Bridge, in acknowledgement that it is not practical nor economically reasonable to completely rehabilitate this 104-year-old structure.

Photos of the Market Street Bridge from a recent inspection are disturbing. Are those pictures and/or report for publication? Does WVDOT have any official comments?

We do not encourage the publication of such photographs since their publication tends to sensationalize bridge issues rather than promote rational discussion. We have learned that it is very difficult for the lay person to distinguish between critical and non-critical information when viewing such photos or reviewing the findings of bridge inspection reports.

These reports are not routinely released to the public; instead, we prefer to review them firsthand in our offices, upon request, to ensure that public inspection of data and photographs included in the reports can benefit from experienced engineering interpretation.

*Is the **Veteran's Bridge** considered to be "structurally deficient." What are the expectations for the bridge in regards to maintenance, its lifespan, etc.?*

It is true that the Veterans Memorial Bridge has a current rating of "Structurally Deficient". This is a technical term that can have numerous specific meanings, most of which do not reflect immediate safety concerns, and can refer to conditions in the substructure, the superstructure, or the deck of a bridge in question. The periodic bridge inspection process that produces findings of structural deficiencies is very conservative in nature and has resulted in an admirable safety record in West Virginia.

The Veterans Memorial Bridge is less than two decades old, has been determined safe for full legal loads, and with proper maintenance and occasional repairs, repainting, and renovation can be expected to remain in service for at least its full 75-year design life.

Bridge inspections

Forty-six people died on December 15, 1967 when a 1,753-foot suspension bridge fell apart during rush hour. A crack, much too small to see, in a metal bar caused the collapse of the Silver Bridge that linked the Ohio River between Point Pleasant, WV and Gallipolis, OH. The next year, Congress added a section to the Federal Aid Highway Act that established bridge inspection standards and initiated a program to train bridge inspectors.

Today, all bridges that carry vehicular traffic and are longer than 20 feet are part of the National Bridge Inventory (NBI) System. Every bridge on public roads must be inspected once every two years unless it is considered to be in very good condition and then the schedule is once every four years.

The U.S has 607,363 bridges. Ohio has over 42,000 highway bridges, making it have the second largest number of bridges in the country.

ODOT is responsible for 14,891 on the state highway system. Within District 11 are 989 bridges.

Twelve percent—or 73,533—of the nation's bridges are considered “structurally deficient.” That figure also includes some built as recently as the early 1990s according to Federal Highway statistics.

Bridge inspections are conducted on the basis of four categories:

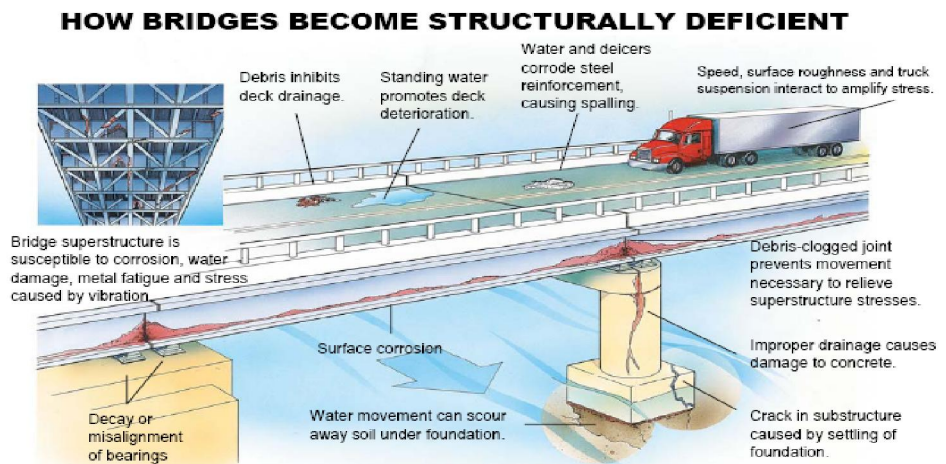
General Appraisal—A composite measure of the major structural items of a bridge. They are considered deficient when this rating drops to 4 or below on a scale of 0 to 9 (the higher the number the better).

Deck Conditions—Ratings measure the major horizontal structural element which carries the riding surface. Bridges are deemed deficient when the deck rating is 3 or 4 on a scale of 1 to 4 (the lower the number the better).

Wearing Surface—Ratings measure the driving surface of a bridge. Bridges are considered deficient when the wearing surface is evaluated at 3 or 4 on a scale of 1 to 4 (the lower the number the better).

Paint Condition—Ratings measure the corrosion protection applied to the structural steel. Bridges are deemed deficient when they are evaluated at 3 or 4 on a scale of 1 to 4 (the lower the number the better). (*NCHRP 20-68, Domestic Scan Pilot Program—Best Practices in Transportation Asset Management*)

What does it mean if a bridge is considered “structurally deficient?” First, this rating does not mean the bridge is unsafe. It does need maintenance and repair. Eventually, it will need rehabilitation or replacement to address deficiencies. Often, these bridges have reduced weight limits—such as has happened with the Market Street Bridge. If, during inspection, unsafe conditions are identified, the bridge will be closed.



Source: Illustration by Jana Brenning. Copyright Jana Brenning. Reprinted with permission. Illustration first appeared in Scientific American, March 1993.

Another bridge rating of concern is “functionally obsolete,” which is how the Fort Steuben Bridge is classified. This means its geometric characteristics, including deck geometry (number and width of lanes), roadway approach alignment and underclearances, are deficient compared with current design standards and traffic demands.

A bridge could be considered both structurally deficient and functionally obsolete with the structural deficiencies taking precedence. An estimated 26% of bridges were classified as structurally deficient, functionally obsolete, or both in 2006. However, this is an improvement since 1990. In that amount of time, the number has been cut almost in half. That is good news!



REGIONAL REVIEW

Volume 9, Issue 2

***Brooke-Hancock-Jefferson
Metropolitan Planning Commission***

Spring 2008

Editor: Linda Taylor
Regional Review
BHJ Metropolitan Planning Commission
124 North Fourth Street Second Floor
Steubenville, OH 43952
740-282-3685
www.bhjmpc.org

Related Web Sites

Appalachian Regional Commission
www.arc.gov

Brooke County Economic Development Authority
www.brookev.org

Brooke Pioneer Trail Assoc. Inc
www.brookepioneertrail.org

Business Development Corporation of the
Northern Panhandle
www.bhbdc.org

CHANGE, Inc.
www.changeinc.org

City of Steubenville
www.ci.steubenville.oh.us

Hancock County Convention and Visitors Bureau
www.hancockcvb.com

Jefferson County Chamber of Commerce
www.jeffersoncountychamber.com

Ohio Department of Transportation
www.dot.state.oh.us

Progress Alliance
www.progressalliance.com

State of Ohio Government Information
www.state.oh.us

State of West Virginia Government Info.
www.state.wv.us

State Route 2 & Interstate 68 Authority
www.route2andi68.com

U.S. Census Bureau
www.census.gov

U.S. Department of Transportation
www.dot.gov

U.S. Economic Development
www.commerce.gov

Village of Wintersville
www.wintersville.net

Weirton Chamber of Commerce
www.weirtonchamber.com

West Virginia Department of Transportation
www.wvdot.com

West Virginia Development Office
www.wvdo.org